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Instructions for use

ONTHOPHAGID-INSECTS FROM FORMOSA

BY

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(松村松年)

During the past three years the author has received many Onthophagid-insects from Formosa, which were mostly collected by Messrs. Y. MIWA, A. UMEMO, Y. YANO, H. KONO, S. KANDA, S. HIRAYAMA and T. NAGASAWA. Drs. Y. MIWA and C. WATANABE sent to the author many valuable informations. To all the gentlemen above mentioned the author's sincere gratitude should be expressed. In Formosa up to date 46 species of Onthophagid-insects have been known, most of them being enumerated by Dr. MIWA in his "A Systematic Catalogue of Formosan Coleoptera, 1930". In 1930 the same author published in the "Insecta Matsumurana" a paper "An Enumeration of the Coprophagid-Coleoptera from Formosa, with a Table of the geographical Distribution", in which he described only one new species. In this present paper one new genus and thirteen new species are diagnosed.

The following 46 Onthophagid-insects are found in Formosa, and they are enlisted as follows:—

1. *Caccobius gonoderus* FAIRM. Formosa, China, India.
Ann. Soc. Ent. Belg., XXXII, p. 17 (1888).
2. *C. tsunoellus* MATS. (n. sp.) Formosa.
3. *C. yamauchii* MATS. Formosa, Japan, Korea.
Ins. Mats., XI, p. 66 (1936).
4. *Onthophagus acuticollis* GILLET Formosa.
Ann. Soc. Ent. Belg., LXVII, p. 255 (1927).
5. *O. agilis* MATS. (n. sp.) Formosa.
6. *O. angulicornis* BOUC. Formosa, China.
Ann. Mus. Civ. Genova, XLVI, p. 211 (1914).
7. *O. angulatus* REDT. Formosa, China, India.
in Hüger Kaschmir., p. 522, t. 24, f. 6 (1848).
8. *O. anguliceps* BOUC. Formosa, China, India.
Ann. Mus. Civ. Genova, XLVI, p. 210 (1914).

9. *Onthophagus argyropygus* GILLET Formosa, China.
Ann. Soc. Ent. Berg., LXVII, p. 256 (1927).
10. *O. armatus* BLANCH. Formosa, China, Malay.
Voy. Pole Sud., p. 98, t. 7, f. 9, 10 (1853).
11. *O. ater* WATERH. Formosa, Japan, China, Sunda Isl.
Trans. Ent. Soc. London, p. 76 (1875).
12. *O. centricornis* F. Formosa, China, India, Java.
Ent. Syst. Suppl., p. 33 (Copriss) (1798).
13. *O. chokakurainus* MATS. (n. sp.) Formosa.
14. *O. dama* F. Formosa, India, Malay.
Ent. Syst. Suppl., p. 32, (Copriss) (1798).
15. *O. dapcauensis* BOUC. Formosa, China.
Vitalis Faune Indoch., IV. p. 30, 58, ♂ (1921).
16. *O. egurianus* MATS. (n. sp.) Formosa.
17. *O. formosanus* GILLET Formosa.
Ann. Soc. Sc. Brux., XLIV., p. 67 (1924).
18. *O. hirsutulus* LANSB. Formosa, Sunda Isl.
Not. Leyd. Mus., V., p. 67, 70 (1883).
19. *O. kônoi* MATS. (n. sp.) Formosa.
20. *O. kuraruanus* MATS. (n. sp.) Formosa.
21. *O. lenzi* HAR. Formosa, Japan, Korea.
Abh. Nat. Ver. Bremen, p. 290 (1874).
22. *O. lunatus* HAR. Formosa, China.
Col. Hefte, IV, p. 84 (1868).
23. *O. luridipennis* BOHEM. Formosa, China, India, Malay.
Resa Eugen., p. 45 (1858).
24. *O. lutosopictus* FAIRM. Formosa, Okinawa.
Bull. Soc. Ent. Fr., p. 69 (1897).
25. *O. mendicus* GILLET Formosa.
Ann. Soc. Sc. Brux., XLVI, p. 67 (1924).
26. *O. midorianus* MATS. (n. sp.) Formosa.
27. *O. mushensis* MATS. (n. sp.) Formosa.
28. *O. nagasawai* MATS. (n. sp.) Formosa.
29. *O. nitidiceps* FAIRM. Formosa, Indo-China, Malay.
Ann. Soc. Ent. Belg., XXXVII, p. 304 (1893).
30. *O. nitidus* WATERH. Formosa, Japan.
Trans. Ent. Soc. London, p. 78 (1875).

31. *Onthophagus orientalis* HAR. Formosa, China, Malay, India,
Sunda Is.
Col. Hefte, IV, p. 83 (1868).
32. *O. proletarius* HAR. Formosa, China.
Col. Hefte, IV, p. 89 (1875).
33. *O. putealis* MATS. (n. sp.) Formosa.
34. *O. rugulosus* HAR. Formosa (?), Korea, China.
Deutsch. Ent. Zeit., XXX, p. 289 (1884).
35. *O. sauteri* GILLET Formosa.
Ann. Soc. Sc. Brux., XLIV, p. 68 (1924).
36. *O. seniculus* F. Formosa, China, Malay, India.
Spec. Ins. L., p. 23 (Scarabaeus) (1781).
37. *O. sonani* MIWA Formosa.
Ins. Mats., IV, p. 171. f. 2. (1930).
38. *O. taurinus* WHITE Formosa, China, Indo-China.
Ann. Mag. Nat. Hist., XIV, p. 424 (1844).
39. *O. tragus* F. Formosa, Japan (Kiushiu), China,
Malay, India.
Ent. Syst. L., p. 56 (Scarabaeus) (1782).
40. *O. tricornis* WIED. Formosa, India, Indo-China,
Malay, Java, China.
Zool. Mag., II, 1, p. 10 (1823).
41. *O. trituber* WIED. Formosa, Sunda Is., Indo-China.
Zool. Mag., II, 1, p. 17 (1823).
42. *O. turmaris* GILLET Formosa.
Ann. Soc. Sc. Brux., XLIV, p. 66 (1924).
43. *O. umenoi* MATS. (n. sp.) Formosa.
44. *O. yanoi* MATS. (n. sp.) Formosa.
45. *O. yubarinus* MATS. Formosa, Japan.
Ins. Mats., XI, p. 168 (1937).
46. *Matashia* (n. g.) *mushana* MATS. (n. sp.) Formosa.

Descriptions of new Species

1. *Caccobius tsunoellus* n. sp.

♂. Black, shiny, with a few short hair. Antennae yellowish ferruginous. Head at the anterior margin strongly reflexed, scarcely incised in the middle; clypeus quite strongly excavated, being moderately punctured, at the lateral margins being carina-like elevated; in the middle with a semicircularly curved transverse carina, which connects with both horns; 2 long erect horns near the

hind margin, which are pointed at the apices and the space between them with much finer punctuation, in the middle having a longitudinally, scarcely elevated region; behind the horns the occiput impunctured. Prothorax scarcely and finely punctured, moderately vaulted, at the anterior margin nearly rightangularly truncated, where the punctures are very few, being provided with 3 shallow excavations in a transverse row; the punctures towards the hind margin less and pupillated; the anterior angle acute, the lateral boss-like elevations low. Elytra finely punctate-striate, the interstices somewhat elevated, with a few fine punctures in 2 longitudinal rows, which become numerous and larger towards the lateral margins; at the apices narrowly brownish. Pygidium with some moderate punctures, in the middle somewhat longitudinally elevated. Legs dark brown, the tibial teeth long, the 2nd tooth the strongest, the 1st being somewhat shorter than the 2nd.

Length—8 mm.

Hab.—Fomosa; one male specimen was collected at Musha in August, 1934, by S. HIRAYAMA.

This species somewhat resembles *C. koichii* MATS., but it may easily be distinguished in having 2 long, erect horns.

2. *Onthophagus agilis* n. sp.

♂. Black, elytra dark brown, at each base with a brownish marking. Antennae ferruginous. Head at the anterior margin strongly reflexed, not emarginated; the whole surface uniformly, closely and finely punctured, near the neck with a shallow excavation, both sides being somewhat elevated, and where the punctures are scarce. On the prothorax the punctures larger than on the frons, in the middle near the anterior margin with a small excavature which extends towards the hind margin as a shallow longitudinal groove; the anterior angle acute. Elytra with the longitudinal impressions remotely, finely punctured, the interstices much elevated, with 2 or 3 irregular longitudinal rows of minute punctures, having each short recumbent grayish hair. Pygidium shiny, with shallow moderate punctures. Legs reddish brown, the tibial teeth short, not well developed, being blunt at the apices.

Length—5 mm.

Hab.—Formosa; one male specimen was collected at Chokakurai (28. XI, 1936) by Y. YANO and presented to the author through S. HIRAYAMA.

This resembles somewhat *O. nitidus* WATERH.

3. *Onthophagus chokakurinus* n. sp.

Somewhat allied to *O. umenoi* MATS., but differs from it as follows:

♀. Antennae dark brown. Anterior margin more strongly reflexed, the clypeal region more roughly, transversely wrinkled; the anterior transverse carina much nearer to the anterior margin, with a coppery lustre; the posterior carina broader, gradually sloping towards the hind margin, the hind slope scarcely punctured with a coppery lustre. Prothorax with much finer and sparser punctures, at the anterior margin with no boss-like elevation; behind each lateral boss with a shallow pit-like excavation, lacking the central longitudinal groove near the hind margin. Elytra punctate-striate, the interstices with 2 or 3 longitudinal rows of much finer punctures, practically lacking hair; in the middle with a large black patch which extends from the base to near the apex; near the lateral margins with each a longitudinal black patch which extends upwardly to the humerus but not to the apex. Pygidium in the middle with a longitudinal oblong black patch. Anterior tibia at the upper margin fuscous, the teeth ferruginous, blunt at the apices, the 1st tooth being the longest.

Length—4 mm.

Hab.—Formosa; one female specimen was collected at Chokakurai (28. VI, 1936) by Y. YANO and presented to the author through S. HIRAYAMA.

4. *Onthophagus egurianus* n. sp.

♂. Black, with an aeneous tinge. Antennae ferruginous. Head longer than broad; clypeus at the anterior margin strongly reflexed, somewhat acuminate, with numerous large and small punctures, at the gena the punctures sparser, at the hind part of the clypeus with an obsolete, transverse, incurved carina-like elevation; on the vertex the punctures less than on the clypeus, on each side with a conically pointed horn-like projection. Prothorax coarsely punctured, with a few recumbent brownish hair, on the sides reddish brown, towards the hind and lateral margins the punctures sparser, the humeral angles being acute; on the anterior margin in the middle with a quite deep longitudinal excavation which is smooth and shiny, and on each side tuber-like elevated; in the middle from the anterior excavation to the hind margin with a narrow longitudinal groove. Elytra punctate-striate, the interstices distinctly elevated, with 3 longitudinal rows of punctures, each with a recumbent brownish hair; at the bases of the 1st, 3rd and 5th interstices as well as at the apices of the 1st, 3rd and 5th with each a reddish brown spot. Pygidium reddish brown, coarsely and sparsely punctured, at the base with an obsolete longitudinal carina-like elevation. Legs dark brown, the middle and hind femora reddish brown; the anterior tibial teeth blunt at the apices.

Length—6 mm.

Hab.—Formosa; two male specimens were collected at Musha (28. VI,

1934) by S. HIRAYAMA.

This resembles somewhat *O. atripennis* WATERH., but may easily be distinguished from the latter in having some reddish brown markings on the elytra.

5. *Onthophagus kônoi* n. sp.

♀. Reddish brown, somewhat shiny, covered with erect brownish hair. Antennae yellowish ferruginous. Head broader than long, at the anterior margin slightly reflexed, scarcely emarginated; clypeus roughly punctured, the punctures being transversely confluent; with one carina in the middle, which continues to the lateral ridges of the clypeus, and in the middle is somewhat produced anteriorly; vertex behind the carina with a few large and small punctures; near the hind margin with 2 small boss-like elevations. Prothorax roughly and quite closely punctured, the punctures not ocellated, on the anterior part being less in number; the humeral angles rightangular, the hind margin before the scutellum with no longitudinal impression. Elytra very finely punctate-striate, the interstices in the middle not punctured and longitudinally elevated, on their sides finely punctured; at the humeral and apical regions with each a large brownish marking. Pygidium reddish brown, roughly, sparsely punctured, in the middle with no trace of longitudinal elevation, having each a long brownish hair. Legs pale reddish brown, the anterior tibia darker, its teeth being blunt at the apices.

Length—4 mm.

Hab.—Formosa; one female specimen was collected at Naihonpo (16. VII, 1925) by H. KÔNO.

This resembles somewhat *O. argyropygus* GILLET., but differs from the latter especially in having the head at the hind margin provided with 2 obsolete tuberculous elevations and in lacking yellowish patches on the elytra.

6. *Onthophagus kuraruanus* n. sp.

♂. Black, shiny, practically with no pubescence on the upperside. Antennae and palpi ferruginous. Head at the anterior margin somewhat reflexed, being scarcely emarginated; at the clypeal region the punctures fused and transversely, roughly wrinkled; frons in the middle with 2 somewhat curved transverse carinae, which are parallel to each other, in the interspace the punctures mostly confluent; at the occiput the punctures except on the lateral sides not confluent. Prothorax moderately punctured, most punctures pupillated, on the disk the punctures being less; on the lateral sides anteriorly with each a quite high declivity, at the inner side of the boss-like elevation shallowly excavated and at the inner end of the excavation with a low boss-like elevation; in the middle with a shallow, longitudinal groove. Elytra with the longitudinal

impressions crenulate-striate, the interstices scarcely elevated, obliquely, roughly wrinkled, the punctures being not distinct. Pygidium distinctly less punctured than on the prothorax. Legs pitchy brown, the tibial teeth well developed, the 2nd tooth longer and robuster than the 1st.

Length—7 mm.

Hab.—Formosa; one male specimen was collected by U. SHIGA at Kuraru (Koshun) (XI, 1935) and presented to the author by S. KANDA.

This resembles somewhat *O. lenzi* HAR., but the clypeal region much more rugosely wrinkled, prothorax with larger punctures.

7. *Onthophagus midorianus* n. sp.

♂ ♀. Black, head and prothorax greenish aeneous. Antennae and palpi dark brown. Head at the anterior margin slightly reflexed, and where the colour is dark brownish, being not emarginated; at the clypeal region the punctures transversely confluent; between the eyes a short transverse carina somewhat excurved; just before the neck with a strong transverse carina, at the back side dark brown, shiny and impunctured, prothorax covered with numerous scale-like granules, on the lateral sides being seen some pale brownish hair; near the anterior margin in the middle with a boss-like elevation, its environment being quite distinctly excavated, and behind the boss a longitudinal groove runs to the hind margin; the anterior angle obtuse. Elytra dark aeneous, with the longitudinal impressions shiny, black, remotely punctured, the interstices not elevated, with 3 or 4 longitudinal rows of granulose punctures which become larger towards the lateral margins. Pygidium grayish pubescent, roughly punctured, some of the punctures being obliquely confluent, in the middle having a low longitudinal keel. Legs and body beneath dark brown, the anterior tibial teeth well developed in the female, but not in the male, the 2nd tooth being longer and stronger than the 1st.

Length—6 mm. (♂ ♀)

Hab.—Formosa; one female specimen was collected at Hori (22. V, 1925) by S. HIRAYAMA and one male (VI, 1936) by U. SHIGA at Kuraru, the latter being presented to the author by S. KANDA.

In form and coloration this species resembles somewhat *Caccobius jezoensis* HAR.

8. *Onthophagus mushensis* n. sp.

Closely allied to *O. egurianus* MATS., but differs from it in the following points:

Antennae fuscous. Clypeus at the apex brownish, less reflexed, the punc-

tures smaller, sparser, having no trace of transverse carina at the hind part, the hind margin of the vertex with a low transverse carina, which is on both ends boss-like elevated. Prothorax at the anterior margin with a much shorter longitudinal excavation, the lateral elevations being much shorter and boss-like; the humeral angles broader, on the disk flatter, in which the median groove is not visible. Elytra with the interstices not elevated, the granulose punctures distinctly smaller. Pygidium in the middle dark brown, at the base with a trace of longitudinal carina. The anterior tibial teeth much shorter.

Length—5 mm.

Hab.—Formosa; one male (?) specimen was collected at Musha (V, 1935) by S. HIRAYAMA.

This species may easily be distinguishable from *O. egurianus* MATS. in having fuscous antennae which are in the latter ferruginous.

9. *Onthophagus nagasawai* n. sp.

♂. Black, opaque, the elytra somewhat shiny, practically lacking hair. Antennae yellowish ferruginous. Head at the anterior margin strongly reflexed, in the middle somewhat truncated, being scarcely emarginated; the punctures on the clypeus moderate, not confluent, the lateral margins carina-like elevated; just before the middle of the head with a transverse carina, on the lateral sides with each a longitudinal carina which runs to the horns, so that representing a quadrate space before the horns, the punctures in that space being smaller and sparser than on the clypeus; horns conical, erect, somewhat converging towards the apices, the hind margin being blade-like elevated and not punctured. Prothorax at the anterior margin with 2 shallow excavations just behind the vertical horns, the punctures uniformly distributed, smaller than those of the clypeus, but larger than those of the frons, being not ocellated; the anterior angle nearly rightangular, near the hind angle on each side with a small shallow pit-like elevation being not distinct. Elytra crenulate-striate, the interstices distinctly elevated, with 2 or 3 longitudinal rows of punctures, becoming numerous and larger towards the lateral margins. Pygidium moderately punctured, with an aeneous luster, in the middle having a low longitudinal carina-like elevation. Legs pitchy brown, the tarsi brownish, the tibial teeth short, the 2nd tooth being somewhat longer than the rest.

Length—7 mm.

Hab.—Formosa; one male specimen was collected at Taihoku (24. VIII, 1902) by T. NAGASAWA.

This species superficially much resembles *Caccobius tsunoellus* MATS., but the horns being shorter.

10. *Onthophagus putealis* n. sp.

♀. Black, subopaque. Antennae yellowish ferruginous. Head at the anterior margin scarcely reflexed, in the middle being somewhat truncated; clypeus moderately punctured, somewhat transversely wrinkled, the lateral margins being obscure; frons with 2 strong transverse carinae, the posterior one being somewhat shorter than the anterior, both being connected with a low longitudinal carina, the rectangular enclosure with a few punctures; near the eyes the punctures larger and near the neck the punctures scarce. Prothorax finely punctured, the punctures on the lateral sides being larger, on the posterior part having a shallow longitudinal median groove; the humeral angles acute, where the punctures are less, the lateral boss-like elevations being low but distinct. Elytra crenulate-striate, the interstices distinctly elevated, with 3 irregular longitudinal rows of granulate punctures, each with a short recumbent grayish hair; the humeral and apical parts somewhat brownish. Pygidium yellowish brown, the punctures sparser but stronger than those on the prothorax, in the middle being scarcely elevated longitudinally. Legs dark brown, the middle and posterior femora reddish brown; the tibial teeth short, blunt at the apices, the 1st tooth being somewhat longer than the 2nd.

Length—6.5 mm.

Hab.—Formosa; one female specimen was collected at Chokakurai (28. VI, 1936) by Y. YANO and presented to the author through S. HIRAYAMA.

This comes near *O. hyuganus* MATS.

11. *Onthophagus umenoi* n. sp.

This resembles *O. matsuokai* from Tokyo, but differs from the latter in the following points:

♀. Antennae yellowish ferruginous. Head at the anterior margin somewhat ferruginous, in the clypeal region transversely wrinkled; the anterior transverse carina stronger, scarcely curved, the posterior carina distinct, parallel to the anterior one, the interspace between these carinae scarcely punctured; the hind part of the posterior carina with a few small punctures. Prothorax near the anterior margin with 3 boss-like elevations, lacking a central longitudinal keel; the punctures deeper, near the hind margin with a longitudinal groove; the inner side of the boss-like elevation distinctly grooved. Elytra yellowish with much finer hair, the longitudinal impressions broader, one spot near the middle at the base, a much larger common patch in the middle of suture, a broader patch at each lateral region and a very small patch on each side of the apical region black. Anterior tibia reddish brown, the teeth much shorter, being blunt at the apices.

Length—5 mm.

Hab.—Formosa; one female specimen was collected at Kuraru (Koshun) (12. VII, 1932) by A. Umeno.

12. *Onthophagus yanoi* n. sp.

♂. Black, subopaque, with a light shade of aeneous tinge. Antennae yellowish ferruginous. Head at the anterior margin scarcely reflexed, rounded and not emarginated; the whole surface uniformly punctured, the punctures being not confluent, near the middle with an obscure boss-like elevation; at the hind margin with a transverse carina-like elevation which does not extend to both ends. Prothorax very finely and quite remotely punctured, the punctures becoming larger towards the lateral margins; the anterior angle obtuse, the boss-like elevation at each lateral side not very distinct, at its inner sides with each a pit-like excavation; in the middle with an obsolete, longitudinal groove. Elytra with the longitudinal impressions remotely punctured, the interstices much elevated, with 3 or 4 irregular longitudinal rows of very fine punctures which become somewhat larger towards the lateral sides, practically with no pubescence. Pygidium with shallow large oblong punctures, in the middle with an obsolete longitudinal keel-like elevation. Legs dark brown, the anterior tibial teeth short, being blunt at the apices.

Length—6 mm.

Hab.—Formosa; one male specimen was collected at Chokakurai (28. VI, 1936) by Y. Yano and presented to the author through S. HIRAYAMA.

In the form of head this species resembles somewhat *O. nitidus* WATERH.

13. *Matashia* (n. g.) *mushana* n. sp.

♂. Black, opaque, prothorax brownish, covered with pale brownish hair. Antennae and palpi dark brown. Head shiny, at the anterior margin strongly reflexed, being slightly rounded, just behind the reflexed part shiny, with a quite deep transverse groove; at the clypeal region sparsely punctured, in the middle with a low boss-like elevation, at the lateral sides with each an oblique carina, the eyes being margined interiorly with each a low keel; just near the hind margin with a strong transverse carina, almost leaving no space behind it; the space between the hind carina and the boss-like elevation distinctly excavated and sparsely punctured. Prothorax strongly punctured and granulated, at the anterior margin being somewhat ridge-like produced, some punctures especially on the lateral sides obliquely confluent, non-pupillated; in the middle with a longitudinal groove, especially towards the hind margin, the humeral angle being acute. Elytra with the longitudinal impression shiny, distinctly punctured, the

interstices having 3 or 4 irregular longitudinal rows of granules, each granule with a short brownish hair. Pygidium roughly punctured, some of them being confluent, in the middle with a shallow, longitudinal furrow. Legs pitchy brown, the anterior tibia with 4 short, blunt teeth.

In the female the head with 2 transverse carinae, the anterior one short, in the middle somewhat conically produced forwardly, the posterior one being higher than that of the male and separated from the neck-part, the occiput shiny, impunctured. Prothorax at the anterior part distinctly lower than that of the male. The anterior tibial teeth longer and pointed.

Length—9 mm. (♂), 8 mm. (♀).

Hab.—Formosa; three (2 ♂, 1 ♀) specimens were collected at Musha (VI-VII, 1935) by S. HIRAYAMA.

This resembles superficially *O. yubarinus* MATS.

***Matashia* n. g.**

Closely allied to *Onthophagus* LATR., but differs from it as follows:

Anterior tibia nearly twice as long as the mid-tibia, the 4 teeth occupying only the anterior half of the tibia, the apical spur at the apex divided into 2 nearly equal branches, forming a fork.

Genotype—*Matashia mushana* MATS.

摘 要

台灣産エンマコガネは今日迄四十六種知れてゐる。この内十三種は新種で、その一種は新屬に編入せらるべきものである。之等新種の標本は近き將來に北大昆蟲學教室に送附せらるることになつてゐる。尙 *Onthophagus rugulosus* HAR. は朝鮮に産するものなるが、果して台灣に産するや否やは判然して居らない。